REMARKS

Applicant, by the amendments presented above, has made a concerted effort to present claims which more clearly define over the prior art of record, and thus to place this case in condition for allowance. Currently, claims 1-21 are pending.

Claim Rejections - 35 U.S.C. §103

Claims 1, 2, 4, 5, 11-18 and 21 were rejected under 35 U.S.C. §103 as being unpatentable over Untied States Patent No. 5,022,070 to Forson et al. in view of United States Patent No. 5,225,314 to Applegate et al.

Claim 1 recites:

> An interface for transmitting data messages between a telephone switching system and an adjunct processor and for translating said **data messages** between data message protocols, said interface comprising:
>
> a hardware component including;
>
> **first and second connectors** for connecting the interface to the telephone switching system, and
>
> a third connector for connecting the interface to the adjunct processor, and
>
> a software component including **at least two data transmission links** between the telephone switching system and the adjunct processor.

Claim 11 recites:

> An interfacing method for processing data <u>messages</u> between a telephone switching system and an adjunct processor and for translating data message protocol comprising the steps of:
>
> providing interface hardware including **first and second connectors** for connecting the interface to the telephone switching system and a third connector for connecting the interface to the adjunct processor; and

transmitting the **data messages** between the telephone switching system and the adjunct processor using at least two transmission links.

Claim 21 recites:

> A method of improving the performance and reliability of **translating data messages** between data message protocols and transmitting **data messages** between a telephone switching system and an adjunct processor comprising the steps of:
>
> providing an interface, wherein the hardware of said interface includes at least a **first and second connectors** for connecting the interface to the telephone switching system and a third connector for connecting the interface to the adjunct processor;
>
> transmitting the **data messages** from the telephone switching system and the adjunct processor **using multiple links**.

Forson discloses a system including a telephone switch 10 utilizing API protocol, a voice messaging system (or adjunct processor) 11 utilizing SMSI protocol, and a protocol convertor 15 which converts data messages received from the switch 10 in the API protocol to the SMSI protocol for use by the adjunct processor 11. The method disclosed in Forson relates to enhancing or extending the SMSI protocol by adding messages (such as leave word calling and maintenance messages) to the communication between the protocol convertor (or interface) 15 and the adjunct processor 11. The improved SMSI protocol messages provide additional functionality between the translator 15 and the adjunct processor 11.

As shown in Figure 1 of Forson, the adjunct processor 11 is connected to the switch 10 through a single data link 12. A first portion 31 of the data link 12 connects the switch 10 to the protocol convertor 15 and a second portion 32 of the data link 12 connects the protocol convertor to the adjunct processor 11. Voice links 13 are also provided between the switch 10 and the adjunct processor 11.

8

Applegate discloses a switch-adjunct integration device 11 which is used to gather information from the switch 10 regarding calls to be transferred to a voice messaging system (adjunct processor) 12 and to transfer calls to analog phone lines 13 leading to the adjunct processor 12. The digital phone lines 14 are used to monitor the analog phone lines 13 and to direct the calls over particular lines 13. In effect, each digital phone line 14 monitors a particular group of analog lines 13. Because each digital phone line 14 is capable of monitoring a certain number of analog lines 13, depending on the number of analog lines 13 to be monitored, additional digital phone lines 14 may need to be added. When the calls become connected to the adjunct processor 12 over the analog lines 13, the integration device 11 sends the collected information to the adjunct processor 12 over the line 15.

At column 4, lines 21-29, Appelgate finds that although the switch 10 includes a proprietary control link 17 which is normally used to connect the switch 10 to the adjunct processor 11, the link 17 is **useless** because the adjunct processor 12 does not understand the communications protocol used on link 17.

1. Claims 1, 11, and 21

First and Second Connectors

The Examiner finds that Forson teaches a hardware component for connecting the interface to the telephone switching system as required by claim 1. The Examiner further finds that the data link 12 of Forson is equivalent to the first connector of claim 1. As recognized by the Examiner, Forson fails to teach a second connector for connecting the interface to the telephone switching system. The Examiner finds that Applegate teaches digital phone lines 14 for connecting the interface to the telephone switching system and finds that the digital phone lines 14 of Applegate are equivalent to the second connector of

9

Applicant's invention. Applicant asserts that the digital phone lines 14 of Applegate are

unrelated to the first and second connectors of claim 1.

In Applicant's invention and in the references cited two types of information are

transmitted between the switch 10 and the adjunct processor 11, voice communication and

data communication. Voice communication is essentially a continuous stream of data

(whether analog or digitally sampled) that is sent between the communicating entities.

Sometimes other signaling is also sent along with the voice communication to indicate

changes in state in the voice communication (e.g. in digital communication, information

about the start, end, and other service information for conferencing, transferring, or placing

the call on hold may occur). In contrast, data communication is typically comprised of sets

of discrete messages, typically in packet format, which convey specific information between

the communicating entities. This data communication can be unrelated to any other

communication such as, voice communication. Applicant's invention relates to the .

transmission of data communication and is represented by the "data messages" of Figure 1

provided between the switch 14 and the translator 10. As recognized by the Examiner, the

"data message" link of Applicant's invention is similar to the portion 31 of the data link 12 of

Forson with an exception. Unlike Applicant's invention which provides for multiple "data

messages" (two of which are shown in Figure 1), Forson provides a single data link 12

between the switch 10 and the adjunct processor 11. The "data message" links of Applicant's

invention are referred to as first and second connectors in claim 1.

Unlike Applicant's invention and the invention of Forson, Applegate discloses the use

of digital phone lines 14, not for the purpose of transmitting data messages but rather for the

purpose of controlling the behavior of voice communication over the analog lines 13. As

described in column 1, lines 44-46, the integration device 11, uses the digital phone lines 14

10

to "connect calls" and to transfer the calls to the analog lines 13. Transfer of the calls from the digital phone lines 14 to the analog lines 13 is accomplished through bridging as described in column 4, line 55-column 5, line 31. Thus, the digital phone lines 14 of Applegate are used to monitor the analog phone lines 13 in an attempt to influence how a call is handled by the adjunct processor. The digital phone lines 13 of Applegate are not used to transmit data messages as required by claims 1, 11 and 21. Neither Forson nor Applegate suggest modifying the digital phone lines 14 of Applegate which are used to monitor the analog phone lines 13 to transmit data messages between the telephone switch and the interface. As no such modification is suggested by Applegate or Forson, Applicant asserts that claims 1, 11 and 21 are not rendered obvious by Forson in view of Applegate.

Applicant's assertion that the digital phone lines 14 of Applegate are not equivalent to the first and second connectors of claims, 1, 11, and 21 is further supported by Applegate's discussion of the proprietary control link 17. Each of the first and second connectors of claims 1, 11, and 21 are similar to portion 31 of the data link 12 of Forson and to the proprietary control link 17 described by Applegate. As described in Forson, portion 31 of the data link 12 carries data messages from the switching system 10 to the protocol convertor 15. Applegate, however, specifically states that the proprietary control link 17 is "useless". Thus it is clear from the disclosure of Applegate that the digital phone lines 14 are different from the proprietary control link 17. Thus, not only does Applegate fail to disclose or suggest modifying the invention taught by Forson to include multiple data links 12, Applegate teaches away from such modification by stating that the proprietary control link 17 (and therefore the data link 12 of Forson) is useless. Thus, it would not be obvious to one of ordinary skill in the art to modify the invention disclosed by Forson to include multiple data message links based upon the teachings of Applegate.

Software Component including at least two data transmission links

Although, the Examiner finds that Forson further teaches a software component including at least two data transmission links between the telephone switching system and the adjunct processor, the Examiner immediately thereafter finds that Forson **fails to teach a** software component including two data transmission links between the telephone switching system and the adjunct processor. Applicant believes the Examiner's initial statement was made in error and understands that the Examiner finds that Forson fails to teach a software component including at least two data transmission links. If the Applicant's understanding is incorrect, Applicant requests that the Examiner clarify his findings.

Although the Examiner finds that Forson fails to teach a software component including two data transmission links, the Examiner finds that Applegate teaches a software component including at least "two digital phone lines between the telephone switching system and the adjunct processor". As required by claims 1, 11 and 21 the "data transmission links" are a portion of the software component of the interface. The portions of Applegate cited by the Examiner, do not discuss a software component but rather discuss digital telephone lines 14. Applicant finds no disclosure in Applegate of a software component which includes two data transmission links. Thus, modifying the invention of Forson in accordance with the teachings of Applegate would not result in the invention of claims 1, 11 and 21.

2. Claims 2 and 12

Claims 2 and 12 require that the transmission of data is alternated among the data transmission links of the software component of the interface. The Examiner finds that

Forson teaches that the software alternates the transmission of data messages among the links. As described in Forson, one data link 12 is provided and multiple voice links 13 are provided. Applicant has studied col 3, line 41-col 4, line 9 and col. 4 lines 15-23, the portions of Forson which the Examiner finds teaches alternating transmission of data messages and finds no discussion of alternating transmission of data messages over two data transmission links of a software component. Rather, Forson discusses "processing elements 47, 57 and an associated memory 48, 58 that stores software routines executable by the elements 47, 57 for controlling the operation of convertor 15 and system 11". Here Forson describes two software routines, one executable by element 47 of the protocol convertor 15 and the other executable by element 57 of the adjunct processor 11. Thus, Forson describes two software components rather than one software component which includes two data transmission lines. In Forson each of the data messages processed by the processing element 47 is later processed by the processing element 57. Therefore, in addition to the fact that Forson does not disclose a single software component including two data transmission links, alternating of the two links is also not disclosed or anticipated by Forson. As neither Forson nor Applegate discloses or anticipates a software component including two transmission links on which data messages are alternately transmitted, Claims 2 and 12 are not rendered obvious by Forson in view of Applegate. Thus, Applicant respectfully requests reconsideration and allowance of claims 2 and 12.

3. Claims 4 and 17

Claim 4 depends from claim 1 and claim 17 depends from claim 11. Applicant asserts that because claims 1 and 11 are allowable , claims 4 and 17 are also allowable. Applicant respectfully requests reconsideration and allowance of claims 4 and 17.

4. Claims 5 and 14

Claim 5 depends from claim 1 and claim 14 depends from claim 11. Applicant asserts that because claims 1 and 11 are allowable, claims 5 and 14 are also allowable. In addition, claims 5 and 14 require that the software component of the interface includes two device driver algorithms to filter erroneous frames from the data messages. In finding that Forson teaches a software component which includes two device driver algorithms to filter erroneous frames from the data messages, the Examiner cites col. 1, lines 63-68; col 4, lines 1-9; col. 7, lines 22-35; col. 8 lines 9-16, 45-61; and col. 9 lines 3-8, 32-48. Applicant asserts that none of the portions cited by the Examiner discloses two device driver algorithms for filtering erroneous frame from the data messages.

Col. 2 line 63-68 of Forson refer to Figures 13 and 14. Figures 13 and 14 does not show an interface including a software component having two device driver algorithms. Rather, Figure 13 illustrates the use of messages received by the convertor 15 and how the system of Forson deals with a lost message. Figure 14 illustrates the form of a maintenance message. Col. 4, lines 9-14 describes a processing element 47 of the translator 15 and a separate processing element 57 of the adjunct processor 11. Col. 7, lines 22-35; col. 8, lines 9-16, 45-61; and col. 9 lines 32-48 each discus an error log 60 which is part of the adjunct processor 11, not the translator 15   Col. 9, lines 3-8 do not related to the filter of erroneous frames from the data messages but rather discuss Forson's attempt to clear messages from a buffer. None of the portions of Forson cited by the Examiner disclose a software component of the interface which includes two device driver algorithms.

Because neither Forson nor Applegate disclose or suggest an interface including a software component which includes two device driver algorithms to filter erroneous frames

14

from the data messages, Applicant respectfully requests reconsideration and allowance of claims 5 and 14.

5. Claims 3 and 13

Claims 3 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Forson in view of Applegate and further in view of United States Patent No. 6,134,671 to Commerford et al. Claim 3 requires that the software component of the interface transmits data along a remaining number of links if one of the transmission links fails. The method of claim 13 requires that if a message is received that a link has failed, the remaining data messages are transmitted on the remaining links.

Commerford discloses a system for monitoring the status of a network. Using up-to-date information about the network's current status. When a connection fails the system forms a new connection.

Claim 3 depends from claim 1 and claim 13 depends from claim 11. Applicant asserts that because claims 1 and 11 are allowable, claims 3 and 13 are also allowable. In addition, Applicant asserts that the disclosure of Commerford is wholly unrelated to Applicant's invention. Unlike Applicant's invention, Commerford teaches a system which creates a new link in the event an original link fails. Applicant's invention, on the other hand provides multiple active links for transmitting data messages. The links of Applicant's invention provide multiple simultaneous connections between the switch and the translator and between the translator and the adjunct processor. Each of the links are equally viable for communication. During operation of Applicant's invention, messages are sent across all of the available links. In the event a link goes out of service, data messages are no longer sent on the out of service link. Rather the data messages are sent along a "remaining number of

links". The "remaining links" recited in claims 3 and 13 are not newly created links such as those described in Commerford. Rather the "remaining number of links" refers to previously active links. By providing multiple active links, Applicant is able to leverage the links to improve the throughput of the system. When one link of Applicant's invention fails, it will have little, if any impact on the system. No such provision of multiple active links is disclosed or suggested by Commerford.

An analogy can be made between Applicant's invention and a highway system. Applicant's invention can be compared to a multiple lane highway. If for example, two data transmission links are used, data is flows over two lanes of the highway. In the event an accident occurs which would block one lane of the highway, the data can simply move to the unobstructed lane and may not even need to slow down if the flow of traffic was not too heavy, prior to the accident. In comparison with Commerford's invention, the data of Commerford moves along a single lane highway. In the event an accident occurs and the lane becomes blocked, a new lane needs to be created so the traffic can flow over that new lane. Therefore, Commerford does not disclose software which transmits data along a remaining number of links in the event one of the links fails. Thus, it would not be obvious to modify the invention of Forson in accordance with the teaching of Applegate and Commerford to arrive at Applicant's invention. Because claims 3 and 13 are neither disclosed or rendered obvious by Forson, Applegate, or Commerford, Applicant respectfully requests reconsideration and allowance of claims 3 and 13.

6. Claims 6 and 15

Claims 6 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over Forson in view of Applegate and further in view of United States Patent No. 5,255,314 to Lin.

16

Claims 6 and 15 each require that the interface includes a software component which includes at least two protocol algorithms to validate data messages.

Lin discloses a system and method for providing two-way content communication between wireless mobile communication devices and a remote computer network.

Claim 6 depends from claim 1 and claim 15 depends from claim 11. Because claims 1 and 11 are allowable, Applicant asserts that claims 6 and 15 are also allowable. In addition, Lin does not disclose the use of multiple protocol stack algorithms to validate the data messages. Although the examiner cites paragraph 0026 of the Lin publication, Applicant finds no reference to multiple protocol algorithms for validation of messages. In addition, no disclosure or suggestion is provided by Lin, Applegate or Forson to modify the invention of Lin for use in connection with an interface for translating the protocol of data messages. Furthermore, neither Lin, Applegate nor Forson disclose or suggest modify the invention of Lin for use in a telephone switching system.

7. Claims 7-10 and 18

Claims 7-10 and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Forson in view of Applegate and further in view of United States Patent Publication No. 2002/0051425 to Larsson.

Claim 7 requires that the software component of the interface includes a "splitting task which receives messages from the at least two protocol stacks. Claim 8 requires that the software component of the interface includes a splitting task algorithim.

Larsson discloses a method for transmitting data messages in a multi-hop environment. Larsson discloses the use of a first station to broadcast a message to several other stations. After one or more of the stations replies to the first station, one of the replying

17

stations is selected and the first station transmits a command message to the selected station to assume responsibility for forwarding the data message.

Claim 7 depends from claim 6. Because claim 6 is allowable, Applicant asserts that claim 7 is also allowable. In addition, although the Examiner finds that the "splitting means" described in paragraph 64 of page 6 of Larsson is equivalent to the splitting task algorithm of Applicant's invention, Applicant respectfully disagrees. Applicant finds no disclosure or suggestion in Larsson that the splitting means receives messages from at least two protocol stack algorithms as required by Claim 7.

Furthermore, Applicant asserts that the invention of Larsson relates to a stream of data packets and operates on a more macro level than Applicant's invention. The specific mention of splitting in Larson is in reference to splitting of the data stream into packets which may proceed over different paths (i.e. over different relaying nodes in the network). Later these data packets arrive at their final destination are placed into a proper order. In contrast, Applicant's invention deals with sending data messages between the switch and the translator which are smaller in size than the data packets of Larsson. Applicant's splitting and combining tasks involve placement of messages **within** the packets rather than splitting of the data on the packet level as discussed by Larsson. Thus, the splitting means described by Larsson is not equivalent to the splitting task algorithm of claims 7 and 8.

Finally, neither Forson, Applegate nor Larsson, disclose or suggest modifying the invention of Larsson for use in connection with a protocol translator interface. As claim 7 is neither anticipated nor rendered obvious by Forson and Applegate in view of Larsson, Applicant respectfully requests reconsideration and allowance claim 7.

Claims 9 and 18 require that the software component of the interface includes a combining task algorithm to combine data messages into sets. Claim 9 depends from claim

1 and claim 18 depends from claim 11. Because claims 1 and 11 are allowable claims 9 and 18 are also allowable. In addition, Applicant reasserts that arguments set forth above with respect to claims 7 and 8. Because claims 9 and 18 are not obvious based upon Forson and Applegate in view of Larsson, Applicant respectfully requests reconsideration and allowance of claims 9 and 18.

Claim 10 depends from claim 1 and further requires that the software component of the interface includes a combining task algorithm which alternates transmission of data messages on at least two links. The Examiner finds that Larsson teaches that the software includes a combining task algorithm which alternates transmission of data messages on at least two links into sets. Larsson discloses the broadcasting of packets. Each packet is transmitted multiple times to multiple intermediate nodes in the network. In contrast, Applicant's invention transmits the data messages along **one** of the multiple links. Furthermore, claim 10 requires the alternate transmission of data messages. Larsson does not disclose or suggests the alternating transmission of data messages. Rather Larsson simply discloses a broadcast of the data messages. As claim 10 is not anticipated or rendered obvious by Forson and Applegate in view of Larsson, Applicant respectfully requests reconsideration and allowance of claim 10.

Allowable Subject Matter

Claims 19 and 20 were objected to as being dependent upon a rejected base claim, but were found allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19

Applicant has rewritten claim 19 in independent form and therefore claim 19 is allowable. Claim 20 depends from claim 19 and therefore, claim 20 is also allowable. Applicant respectfully requests reconsideration and allowance of claims 19 and 20.

In view of the above Amendments and Remarks, Applicant respectfully submits that the claims of the application are allowable over the rejections of the Examiner. Should the Examiner have any questions regarding this Amendment, the Examiner is invited to contact one of the undersigned attorneys at (312) 704-1890.

Respectfully submitted,

Dated: 2/9/04

By: _Paige A. Kitzinger_

David J. Marr, Reg. No. 32,915
Paige A. Kitzinger, Reg. No. 45,219
TREXLER, BUSHNELL, GIANGIORGI
    BLACKSTONE & MARR, LTD.
105 W. Adams Street
Suite 3600
Chicago, Illinois 60603
(312) 704-1890

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